

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

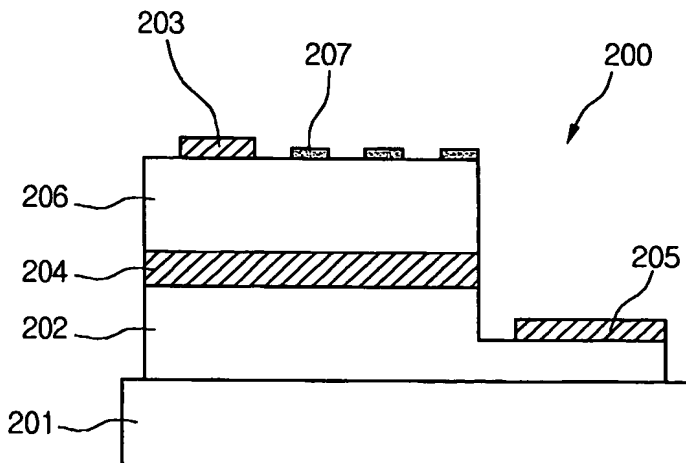


(43) International Publication Date
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number
WO 2005/022656 A1

- (51) International Patent Classification⁷: **H01L 33/00**
- (21) International Application Number:
PCT/KR2004/002126
- (22) International Filing Date: 24 August 2004 (24.08.2004)
- (25) Filing Language: Korean
- (26) Publication Language: English
- (30) Priority Data:
10-2003-0060897
1 September 2003 (01.09.2003) KR
10-2003-0065634
22 September 2003 (22.09.2003) KR
- (71) Applicant (for all designated States except US): **LG INNOTEK CO., LTD** [KR/KR]; 14th Fl. Hansol Bldg., 736-1, Yoksam-dong, Kangnam-gu, Seoul 135-983 (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KIM, Sang-kee** [KR/KR]; 103-307 Chumdan Moor Apt., Wolgae-dong, 757-5 Gwangsan-gu, Gwangju-si 506-821 (KR). **LEE, Song-Jae** [KR/KR]; 110-1501 Wolpyung Joogong Apt., Wolpyung2-dong, Seo-gu, Daejeon-si 302-793 (KR). **JUNG, Hea-Jung** [KR/KR]; 214 Gonggan Apt. Mae-gok-dong 214-16, Book -gu, Gwangju-si 500-815 (KR).
- (54) Title: LED AND FABRICATION METHOD THEREOF
- (74) Agent: **HAW, Yong-Noke**; 8th Fl. Songchon Bldg., 642-15 Yoksam-dong, Kangnam-gu, Seoul 135-080 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(57) Abstract: A light emitting diode is provided. The diode includes: a substrate; a first nitride gallium layer disposed above the substrate; a first electrode provided at one portion of and above the first nitride gallium layer; an active layer provided at the other portion of and above the first nitride gallium layer, for emitting light; a second nitride gallium layer provided above the active layer; and transparent electrodes spaced apart from one another above the second nitride gallium layer.

WO 2005/022656 A1